

The latest truck cranes are offering higher lifting capacities, leaving the lower end of the lifting scale for the truck mounted variant.
LAURA HATTON reports

A Link-Belt HTC-8675 Series II 70 tonne hydraulic truck crane lifting a 27 tonne long-stroke pumping system for sucker-rod pumps in the Bakken Formation near Williston, North Dakota, USA



A growing trend

The primary benefits of a truck crane are that it is a good balance between easy transport and lifting performance. It has good reach and capacity and can be driven at highway speeds. It has a purpose-built carrier chassis with heavy duty truck type suspension, which provides it with a number of advantages compared to a truck mounted crane or boom truck (both cranes mounted on commercial truck chassis). Rick Curnutte, Link-Belt product manager for telescopic truck and all terrain cranes explains, "With a truck crane we can integrate the lifting performance into the

transportation performance of the crane. When Link-Belt designs a truck crane, we build it from the ground up. We are able to move axles or change the frame design in order to get the best transport and lift performance."

As a result of this flexibility in design, more focus is being put on designing truck cranes at the higher end of the capacity scale, meaning lower capacity truck cranes are being replaced by truck mounted models. "There is a shift in demand for larger capacity truck cranes, with truck mounted cranes taking over the lower range," Rüdiger Zollondz, Terex Cranes

product marketing director, explains.

The main drive behind this change is customer demand. As a spokesperson from Manitowoc points out, customers increasingly want to have the largest possible crane that is road ready and without the need for special permits. "Companies desire larger truck cranes that still have the flexibility of the boom truck, with the comforts and serviceability that commercially-sourced trucks provide."

Complications do, however, arise, when it comes to weight and dimensions, especially when the varying worldwide road regulations between countries and states are taken into account. As a result, truck cranes can sometimes need special road permits before they are permitted for some highway travel. The way of getting around this is to build a crane on a commercial chassis; however, many truck mounted cranes at the higher end of the capacity scale can lose the flexibility and ease of transport that makes them so desirable in the first place.

Other regulations that complicate designs include axle loads, gross vehicle

The 90 tonne capacity Manitowoc Grove TMS9000E has an 11.2 to 43.4 m five-section full power boom



TRUCK CRANES

Terex offers four truck crane models for the US and Canadian markets built at its Waverly, Iowa facility, including this T 780



weight, dimensions (especially overall width and height), noise regulation and exhaust gas emission laws. To meet all these demands, crane manufacturers have to come up with a number of solutions and, in most cases, offer different market versions. In some cases this has meant offering models both on a purpose-built chassis and a commercial chassis.

Tadano offers its HK series of truck mounted cranes for the European market, the GT series for the Chinese market and the GT-600EX for the Australian market. It has a capacity of 60 tonnes at 3 m radius, a maximum boom length of 43 m and it can be configured with an 8.8 m jib. Gross vehicle weight is 41.5 tonnes and it is on a purpose-built chassis.

For customers who have to follow a country's strict load regulations or emission

laws, however, (for example Singapore) and require right-hand steering truck cranes, Tadano introduced the GS-600EX truck mounted crane. The new version has a 60 tonne capacity, a 42 m five-section hexagonal box boom and is fitted on a 4-axle Scania carrier with right-hand steering, allowing it to meet strict emission control regulations for use on public roads.

"Engine regulations are one of the biggest factors affecting manufacturers right now," Rüdiger Zollondz says. "New emission laws required sustaining engineering resources to evaluate and design frames. The United States, for example, is one of the largest markets for truck cranes (behind China) but also a very difficult country for road regulations. Regulations vary by state. Weights, dimensions and axle spacing need to be taken into account when designing for roadability."

To try and meet all the demands, Terex offers four truck crane models for the US and Canadian markets from its Waverly, Iowa facility, including the T 340, T 340 XL, T 560 and T 780. All are available with EPA-compliant engines for the USA and Canada and Tier 3 to meet regulations for the rest of world. The T 340-1 and T 340-1XL have road speeds of up to 96 km/h, a 40 US ton (36 tonne) capacity, a boom length of 29 m on the T 340-1 and 32 m on the T 340-1XL. Maximum tip height on the T 340-1 is 30.2 m, while the T 340-1XL is 33.5 m.

Latest models

The latest truck crane from Manitowoc is the Grove TMS9000E. The 90 tonne capacity model has an 11.2 to 43.4 m five-section full power boom with patented twin-lock boom pinning system. In addition, it also has a 10 to 17 m bi-fold lattice swing away extension and optional lattice insert extensions, giving a maximum tip height of 72.2 m. On board it can carry up to 21.3 tonnes of counterweight and power is from a Cummins ISM 450 hp, 6-cylinder turbo-charged engine. It also has



the CraneStar asset management system to remotely monitor crane data. Two-stage inverted jack outriggers are used and it can reach a speed of 105 km/h.

From Zoomlion is the new 110 tonne capacity QY110 truck crane. Mounted on a five axle carrier, it has a 72 m, seven section boom. Its weight is given by the manufacturer as 54.7 tonnes.

A telescopic luffing jib is another feature and it has three-axle drive and three-axle steering. It is designed to be easy to operate, the manufacturer says. The main boom is 58.5 m and maximum lifting height is 85 m when configured with the full jib. Maximum speed is 78 km/h and the QY110 has a minimum turning radius of 11.5 m.

From Sany is the STC2200, a 200 tonne capacity truck crane on a five axle carrier with a 68 m telescopic boom. A 36 m luffing jib is an option. The model was on display at Bauma China (see *IC* January 2015, page 14).

Regional designs

For the North American market, Link-Belt offers the HTC-8660, HTC-8675 and HTC-86100, all fitted with on-highway 2013 emission regulation-compliant engines for single engine cranes.

"The HTC-3140 comes with both an on-highway 2013 emission-compliant carrier and a Tier IV final upper unit," Rick Curnutte explains. For other regions of the world, Link-Belt offers a Tier 3/ Stage IIIA Cummins engine option. The Link-Belt models are fitted with a telematics system, which gives the fleet manager access to real-time data to forecast better the crane's maintenance and service intervals and needs.



The Tadano GS-600EX on a commercial chassis for the Singapore market

TRUCK CRANES



The Sany STC2200 is a 200 tonne capacity truck crane on a five axle carrier

viewing cameras in the carrier cab, which display automatically when either action indicator is activated. In the upper, the new camera on the winches and swing camera both activate when you those functions are used. With the new cameras, you've got a live view of the action being conducted from within the cab."

Truck crane design is heading in the direction of models that will meet Tier IV Final exhaust emission regulations but, with the announcement of upcoming Tier V / Stage Five emission regulations, the ease of transport that the truck crane is associated with could be affected. Manufacturers are, however, preparing to meet these impending regulations.

Manitowoc, for example, says it is already finishing the Tier IV final enhancements of the larger truck crane line from the Grove brand, and that it has resources in place to continue developing new products in the coming years.

The models include radios for the operator and driver cabs, LED lighting on cab lights plus halogen headlights. "In the last year, we have also updated the upper work platforms with guardrails," Curnutte adds. "We have added backup and right side



Zoomlion's new 110 tonne capacity QY110 truck crane on a five axle carrier



The Terex T 340-1 offers a road speed up to 60 mph, a 40 US ton (36 tonnes) capacity and a 29 m boom

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